Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "Version with Markings to Show Changes Made."

Favorable consideration and allowance are earnestly solicited.

Respectfully submitted,
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VERSION WITH MARKINGS TO SHOW CHANGES MADE

A paragraph has been added immediately after the title.

Paragraph beginning at lines 7-16 of page 15 has been amended as follows:

The CF-complementary and CF-non-complementary strands that were used were:

CF-complementary:

~~5~~3'- TGGTAATTTCTTTTATAGTAGAAACCACAAAGG-~~3~~5'

CF-non-complementary (F-508):

5'-GGAAACACCAATGATATTTTCTTTAATGGT-3'

Control B2-complementary: ~~5~~3'-CAGTTCTACGATGGCAAGTC-~~3~~5'

Control B2-non-complementary (3 bases different):

5'- CTGAATTATAGCATCTTGAC-3'

Control B2-non-complementary: 5'-CTGAATTATAGCATCTTGAC-3'

Claims 5-7, 9-11, 14 and 17 have been amended as follows:

5. (Amended) A semiconductor device according to ~~anyone of Claims 1-4~~Claim 1 or 3, wherein said conducting semiconductor layer is a semiconductor selected from a III-V and a II-VI material, or mixtures thereof, wherein III, V, II and VI denote the Periodic Table elements III =Ga, In; V=As, P; II=Cd, Zn; VI=S, Se, Te.

6. (Amended) A semiconductor device according to ~~any one of Claims 1-5~~Claim 1 or 3, wherein said conducting semiconductor layer (2) is doped n-GaAs or doped n-(Al,Ga)As.

7. (Amended) A semiconductor device according to ~~anyone of Claims 1-6~~Claim 1 or 3, wherein the one or more insulating or semi-insulating layers, that may serve as the base for the device, is a dielectric material selected from the group consisting of silicon oxide, silicon nitride and an undoped semiconductor selected from a III-V and a II-VI material, or mixtures thereof, wherein III, V, II and VI denote the Periodic Table elements III =Ga, In; V=As, P; II=Cd, Zn; VI=S, Se, Te.

9. (Amended) A semiconductor device according to ~~anyone of Claims 1 to 8~~Claim 6, wherein said conducting semiconductor layer of doped n-GaAs is on top of a semi-insulating layer of (Al,Ga)As which is on top of another semi-insulating layer of GaAs, and on top of said conducting semiconductor doped n-GaAs layer there is a semi-insulating

undoped GaAs layer to which is attached said layer of said at least one single-stranded DNA probe.

10. (Amended) A semiconductor device according to ~~any one of Claims 1-8~~Claim 6, wherein said conducting semiconductor layer of doped n-(Al,Ga)As is on top of an insulating layer of undoped GaAs which is on top of a semi-insulating layer of GaAs, on top of said conducting semiconductor doped n-(Al,Ga)As layer there is a semi-insulating undoped (Al,Ga)As layer on top of which there is an upper undoped GaAs semi-insulating layer, and said layer of at least one single-stranded DNA probe is attached to the upper undoped GaAs semi-insulating layer.

11. (Amended) A semiconductor device according to ~~any one of Claims 1 to 10~~Claim 1 or 3, wherein said at least one single-stranded DNA probe comprises a sequence complementary to a sequence of a target DNA or RNA.

14. (Amended) An array of semiconductor devices according to ~~anyone of Claims 1 to 10~~Claim 1 or 3, wherein each device in the array carries a different DNA probe.

17. (Amended) A method for the detection of a target DNA or RNA which comprises:

(i) exposing the single-stranded DNA probe of at least one semiconductor device according to ~~anyone of Claims 1 to 10~~Claim 1 or 3 ~~or of an array according to claim 14~~, to a sample containing the target DNA or RNA, under hybridization conditions; and

(ii) monitoring either the current change resulting from the hybridization process when a constant electric

potential is applied between the two conducting pads or measuring the change in the electric potential required to keep a constant current.

A new claim 19 has been added.